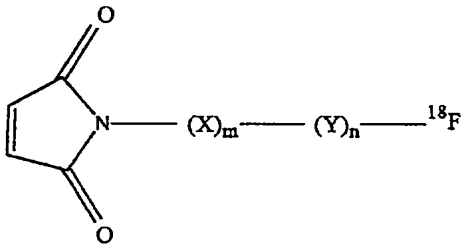
AMENDMENTS TO THE CLAIMS

Please cancel claims 1-46, and add new claims 47-104, as follows:

Claims 1-46 (Cancelled).

Claim 47 (New) A compound according to formula (I):



(I)

wherein

m represents an integer from 0 to 10;

n represents an integer from 1 to 10;

Y represents a monocyclic or bicyclic heterocyclic group selected from the group consisting of imidazolyl, pyrazolyl, benzimidazolyl, pyridinyl, pyridazinyl, pyrimidinyl, pyrazinyl, triazinyl, quinolinyl, isoquinolinyl, cinnolinyl, quinazolinyl, quinoxalinyl and purinyl, wherein Y may optionally be substituted with one or more substituents selected from the group consisting of hydrogen, halogen, phenyl, C_1-C_6 alkyl, C_1-C_6 alkoxy, aryloxy, amino, mono- or di(C_1-C_6 alkyl)amino, mono- or di(aryl)amino, thio, C_1-C_6 alkylthio, arylthio, formyl, C_1-C_6 alkyl-carbonyl, arylcarbonyl, carbonyl, C_1-C_6 alkoxy-carbonyl, aryloxycarbonyl, C_1-C_6 alkylamino-carbonyl, arylaminocarbonyl and trifluoromethyl; and

X represents a radical of the following formula:

$$(U)_a\text{-}((CR_1R_2)_b\text{-}(V)_c)_d\text{-}((CR_3R_4)_e\text{-}(W)_f)_g\text{-}$$

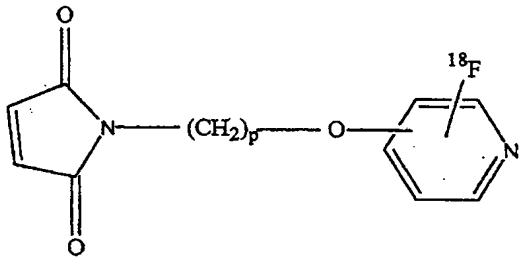
wherein

a, b, c, d, e, f and g each independently represent an integer from 0 to 10; and

U, V and W each independently represent $-NR_1-$, -O-, -S-, -N(-O)-, ethynyl, $-CR_1=CR_2-$, -(C=O)-, -(C=S)-, $-C(=NR_1)-$, -C(=O)O-, -(C=S)S-, $-C(=NR_1)NR_2-$, $-CR_1R_2-$, $-CR_1OR_2-$ or $-CR_1NR_2R_3-$, wherein R_1, R_2, R_3 and R_4 are each independently selected from the group consisting of hydrogen, halogen, phenyl, C_1-C_6 alkyl, C_1-C_6 alkoxy, aryloxy, amino, mono- or di(C_1-C_6 alkyl)amino, mono- or di(aryl)amino, thio, C_1-C_6 alkylthio, arylthio, formyl, C_1-C_6 alkyl-carbonyl, arylcarbonyl, carbonyl, C_1-C_6 alkoxy-carbonyl, aryloxycarbonyl, C_1-C_6 alkylamino-carbonyl, arylaminocarbonyl and trifluoromethyl.

Claim 48 (New) The compound according to claim 47, wherein n is 1 and Y is a 3-pyridinyl group.

Claim 49 (New) The compound according to claim 48, wherein the compound is represented by formula (II):



(II)

wherein p represents an integer from 1 to 10.

Claim 50 (New) The compound according to claim 49, wherein the compound is selected from the group consisting of:

1-[2-(2-[^{18}F]fluoropyridin-3-yloxy)ethyl]-pyrrole-2,5-dione;

1-[4-(2-[^{18}F]fluoropyridin-3-yloxy)butyl]-pyrrole-2,5-dione;

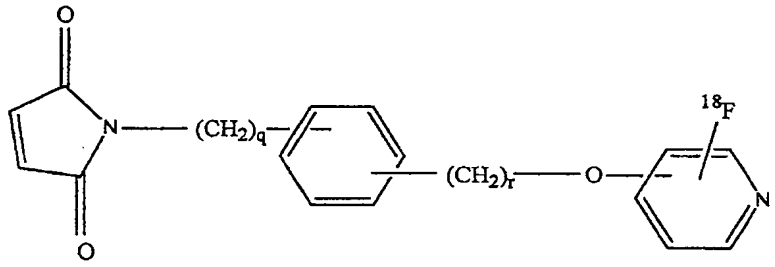
1-[5-(2-[^{18}F]fluoropyridin-3-yloxy)pentyl]-pyrrole-2,5-dione;

1-[6-(2-[^{18}F]fluoropyridin-3-yloxy)hexyl]-pyrrole-2,5-dione;

1-[(2-[^{18}F]fluoropyridin-3-yloxy)methyl]-pyrrole-2,5-dione; and

1-[3-(2-[^{18}F]fluoropyridin-3-yloxy)propyl]-pyrrole-2,5-dione.

Claim 51 (New) The compound according to claim 48, wherein the compound is represented by formula (III):



(III)

wherein q and r each independently represent an integer from 0 to 10.

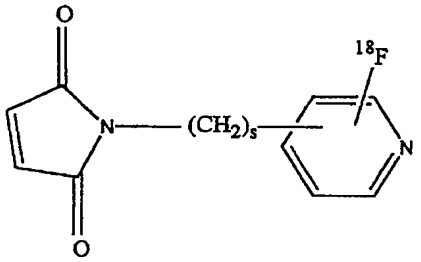
Claim 52 (New) The compound according to claim 51, wherein the compound is selected from the group consisting of:

1-{4-[2-(2-[^{18}F]fluoropyridin-3-yloxy)-ethyl]phenyl}pyrrole-2,5-dione;

1-[4-(2-[^{18}F]fluoropyridin-3-yloxymethyl)-phenyl]pyrrole-2,5-dione; and

1-[4-(2-[^{18}F]fluoropyridin-3-yloxymethyl)-benzyl]pyrrole-2,5-dione.

Claim 53 (New) The compound according to claim 48, wherein the compound is represented by formula (IV):

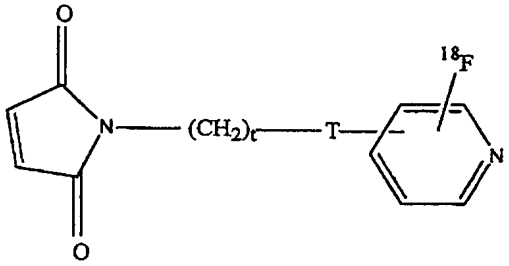


(IV)

wherein s represents an integer from 1 to 10.

Claim 54 (New) The compound according to claim 53, wherein the compound is 1-[3-(6-[^{18}F]fluoropyridin-3-yl)propyl]-pyrrole-2,5-dione.

Claim 55 (New) The compound according to claim 48, wherein the compound is represented by formula (V):



(V)

wherein t represents an integer from 0 to 10; and T is a -CH=CH- group or a -C≡C- group.

Claim 56 (New) The compound according to claim 55, wherein the compound is selected from the group consisting of:

1-[3-(6-[^{18}F]fluoropyridin-3-yl)allyl]-pyrrole-2,5-dione; and

1-[3-(6-[^{18}F]fluoropyridin-3-yl)prop-2-ynyl]pyrrole-2,5-dione.

Claim 57 (New) A kit comprising a macromolecule and the compound according to claim 47.

Claim 58 (New) The kit according to claim 57, wherein the kit is a detection and analysis kit for medical imaging.

Claim 59 (New) The kit according to claim 57, wherein the kit is a diagnosis kit.

Claim 60 (New) The kit according to claim 57, wherein the macromolecule is a biological macromolecule.

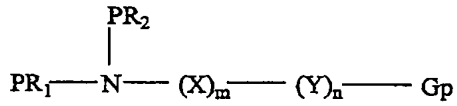
Claim 61 (New) The kit according to claim 57, wherein the macromolecule is a biological macromolecule selected from the group consisting of an oligonucleotide, a protein, an antibody and a peptide.

Claim 62 (New) The kit according to claim 57, wherein the macromolecule is a macromolecule for recognition of a specific site that exhibits target molecules associated with a particular disease.

Claim 63 (New) The kit according to claim 57, wherein the macromolecule is a macromolecule for recognition of a specific site that is selected from the group consisting of apoptosis sites, necrosis sites or tumor sites.

Claim 64 (New) A process for preparing the compound according to claim 47, wherein the process comprises:

contacting a precursor compound according to formula (Ia):



(Ia)

wherein

PR_1 and PR_2 each independently represent: a hydrogen or a protective group, with the proviso that PR_1 and PR_2 are not both a hydrogen; or PR_1 and PR_2, together with the nitrogen atom, form a cyclic protective group;

Gp represents a leaving group capable of being replaced by a fluorine-18 atom;

m represents an integer from 0 to 10;

n represents an integer from 1 to 10;

Y represents a monocyclic or bicyclic heterocyclic group selected from the group consisting of imidazolyl, pyrazolyl, benzimidazolyl, pyridinyl, pyridazinyl, pyrimidinyl, pyrazinyl, triazinyl, quinolinyl, isoquinolinyl, cinnolinyl, quinazolinyl, quinoxalinyl and purinyl, wherein Y may optionally be substituted with one or more substituents selected from the group consisting of hydrogen, halogen, phenyl, C_1-C_6 alkyl, C_1-C_6 alkoxy, aryloxy, amino, mono- or di(C_1-C_6 alkyl)amino, mono- or di(aryl)amino, thio, C_1-C_6 alkylthio, arylthio, formyl, C_1-C_6 alkyl-carbonyl, arylcarbonyl, carbonyl, C_1-C_6 alkoxy-carbonyl, aryloxycarbonyl, C_1-C_6 alkylamino-carbonyl, arylaminocarbonyl and trifluoromethyl; and

X represents a radical of the following formula:

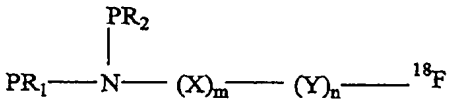
$$(U)_a\text{-}((CR_1R_2)_b\text{-}(V)_c)_d\text{-}((CR_3R_4)_e\text{-}(W)_f)_g\text{-}$$

wherein

a, b, c, d, e, f and g each independently represent an integer from 0 to 10; and

U, V and W each independently represent $-NR_1-$, -O-, -S-, -N(-O)-, ethynyl, $-CR_1=CR_2-$, -(C=O)-, -(C=S)-, $-C(=NR_1)-$, -C(=O)O-, -(C=S)S-, $-C(=NR_1)NR_2-$, $-CR_1R_2-$, $-CR_1OR_2-$ or $-CR_1NR_2R_3-$, wherein R_1, R_2, R_3 and R_4 are each independently selected from the group consisting of hydrogen, halogen, phenyl, C_1-C_6 alkyl, C_1-C_6 alkoxy, aryloxy, amino, mono- or di(C_1-C_6 alkyl)amino, mono- or di(aryl)amino, thio, C_1-C_6 alkylthio, arylthio, formyl, C_1-C_6 alkyl-carbonyl, arylcarbonyl, carbonyl, C_1-C_6 alkoxy-carbonyl, aryloxycarbonyl, C_1-C_6 alkylamino-carbonyl, arylaminocarbonyl and trifluoromethyl.

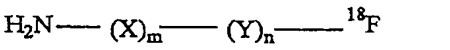
with a source of [^{18}F]-labeled fluoride anions (F^-) to provide a compound according to formula (Ib):



(Ib)

;

removing the protective group(s) PR_1 and/or PR_2 from the compound according to formula (Ib) to provide a compound according to formula (Ic):



(Ic)

; and

reacting the compound according to formula (Ic) with a reactant capable of providing a maleimido group from an amino group, to yield the compound according to claim 47.

Claim 65 (New) The process according to claim 64, wherein the protective group(s) PR_1 and/or PR_2 is/are selected from the group consisting of tert-butoxycarbonyl (BOC) and fluorenylmethoxycarbonyl (FMOC).

Claim 66 (New) The process according to claim 64, wherein the protective groups PR_1 and PR_2, together with the nitrogen atom, form a phthalamido protective group.

Claim 67 (New) The process according to claim 64, wherein Gp is selected from the group consisting of a halogen, a mesyl group, a tosyl group, a triflate group, a nitro group and an ammonium salt.

Claim 68 (New) The process according to claim 67, wherein Gp is an ammonium salt and the ammonium salt is trimethylammonium trifluoromethanesulphonate.

Claim 69 (New) The process according to claim 64, wherein the source of [^{18}F]-labeled fluoride anions (F^-) comprises the fluoride anions (F^-) and a counterion.

Claim 70 (New) The process according to claim 69, wherein the counterion is a cation selected from the group consisting of rubidium, tetrabutylammonium, potassium, sodium and lithium.

Claim 71 (New) The process according to claim 69, wherein the counterion is a cation selected from the group consisting of potassium, sodium and lithium, and the cation is stabilized by a cryptand or a crown ether.

Claim 72 (New) The process according to claim 64, wherein said removing is carried out by deprotecting the compound according to formula (Ib) with trifluoroacetic acid (TFA) in a solvent for a period of 1-5 minutes to provide the compound according to formula (Ic).

Claim 73 (New) The process according to claim 72, wherein the solvent is dichloromethane.

Claim 74 (New) The process according to claim 64, wherein the reactant capable of providing a maleimido group from an amino group is selected from the group consisting of N-methoxycarbonylmaleimide and succinimide.

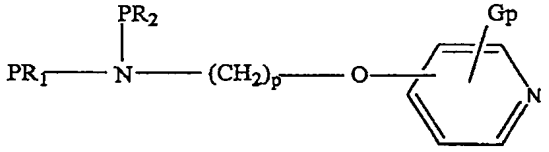
Claim 75 (New) The process according to claim 64, wherein said reacting is carried out in a solvent with heating at a temperature of 100-200°C for a period of 1-20 minutes.

Claim 76 (New) The process according to claim 75, wherein the solvent is xylene or tetrahydrofuran.

Claim 77 (New) The process according to claim 64, wherein said reacting is carried out in a two-phase mixture at ambient temperature for a period of 3-15 minutes.

Claim 78 (New) The process according to claim 77, wherein the two-phase mixture comprises dioxane and aqueous sodium bicarbonate.

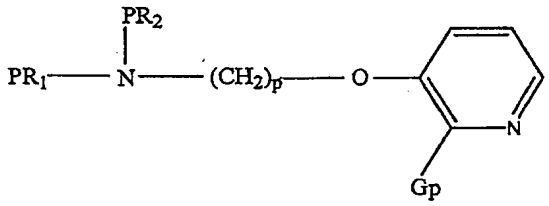
Claim 79 (New) The process according to claim 64, wherein the precursor compound according to formula (Ia) corresponds to a compound according to formula (IIa):



(IIa)

wherein p represents an integer from 1 to 10.

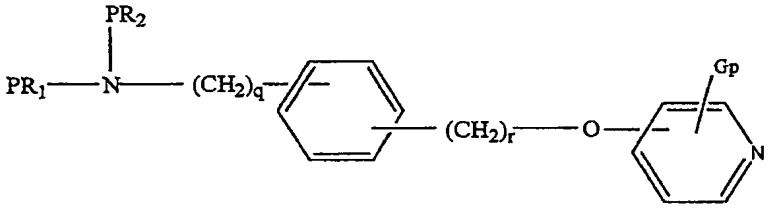
Claim 80 (New) The process according to claim 64, wherein the precursor compound according to formula (Ia) corresponds to a compound according to formula (IIb):



(IIb)

wherein p represents an integer from 1 to 10.

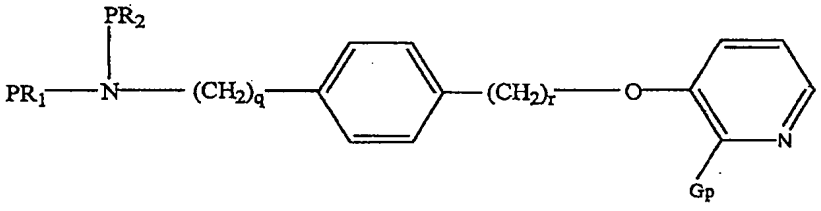
Claim 81 (New) The process according to claim 64, wherein the precursor compound according to formula (Ia) corresponds to a compound according to formula (IIIa):



(IIIa)

wherein q and r each independently represent an integer from 0 to 10.

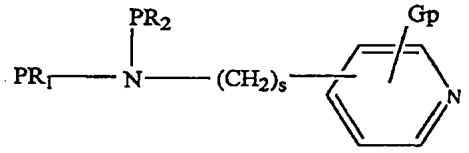
Claim 82 (New) The process according to claim 64, wherein the precursor compound according to formula (Ia) corresponds to a compound according to formula (IIIb):



(IIIb)

wherein q and r each independently represent an integer from 0 to 10.

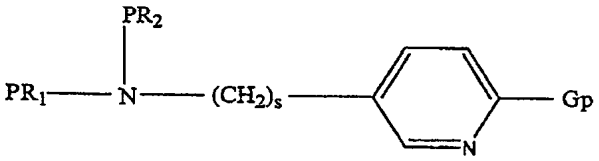
Claim 83 (New) The process according to claim 64, wherein the precursor compound according to formula (Ia) corresponds to a compound according to formula (IVa):



(IVa)

wherein s represents an integer from 1 to 10.

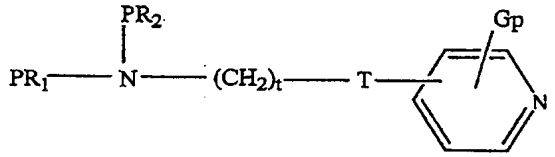
Claim 84 (New) The process according to claim 64, wherein the precursor compound according to formula (Ia) corresponds to a compound according to formula (IVb):



(IVb)

wherein s represents an integer from 1 to 10.

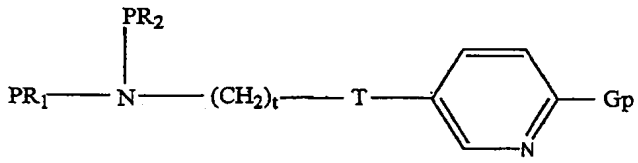
Claim 85 (New) The process according to claim 64, wherein the precursor compound according to formula (Ia) corresponds to a compound according to formula (Va):



(Va)

wherein t represents an integer from 0 to 10; and T is a -CH=CH- group or a -C≡C- group.

Claim 86 (New) The process according to claim 64, wherein the precursor compound according to formula (Ia) corresponds to a compound according to formula (Vb):



(Vb)

wherein t represents an integer from 0 to 10; and T is a -CH=CH- group or a -C≡C- group.

Claim 87 (New) A precursor compound according to formula (Ia) as defined in claim 64.

Claim 88 (New) A precursor compound according to formula (IIa) as defined in claim 79.

Claim 89 (New) A precursor compound according to formula (IIb) as defined in claim 80.

Claim 90 (New) A precursor compound according to formula (IIIa) as defined in claim 81.

Claim 91 (New) A precursor compound according to formula (IIIb) as defined in claim 82.

Claim 92 (New) A precursor compound according to formula (IVa) as defined in claim 83.

Claim 93 (New) A precursor compound according to formula (IVb) as defined in claim 84.

Claim 94 (New) A precursor compound according to formula (Va) as defined in claim 85.

Claim 95 (New) A precursor compound according to formula (Vb) as defined in claim 86.

Claim 96 (New) A precursor compound selected from the compounds according to any one of claims 50, 52, 54 and 56 in which the [^{18}F] group is replaced by a non-radioactive halogen, an ammonium salt, or a nitro group, and the 1-pyrrole-2,5-dione group is replaced by a tert-butoxycarbonylamino group.

Claim 97 (New) A precursor compound selected from the compounds according to any one of claims 50, 52, 54 and 56 in which the [^{18}F] group is replaced by a trimethylammonium trifluoromethane-sulphonate group, and the 1-pyrrole-2,5-dione group is replaced by a tert-butoxycarbonylamino group.

Claim 98 (New) A precursor compound, wherein the precursor compound is [3-(3-tert-butoxycarbonylaminopropoxy)pyridin-2-yl]trimethylammonium trifluoromethanesulphonate.

Claim 99 (New) A precursor compound, wherein the precursor compound is a tert-butyl ester of [3-(2-nitropyridin-3-yl-oxy)propyl]carbamic acid.

Claim 100 (New) A method of labeling a macromolecule comprising coupling the compound according to claim 47 to the macromolecule.

Claim 101 (New) The method according to claim 100, wherein the macromolecule is a biological macromolecule.

Claim 102 (New) The method according to claim 100, wherein the macromolecule is a biological macromolecule selected from the group consisting of an oligonucleotide, a protein, an antibody and a peptide.

Claim 103 (New) The method according to claim 100, wherein the macromolecule is a macromolecule for recognition of a specific site that exhibits target molecules associated with a particular disease.

Claim 104 (New) The method according to claim 100, wherein the macromolecule is a macromolecule for recognition of a specific site that is selected from the group consisting of apoptosis sites, necrosis sites or tumor sites.